

Work Order ID 91238

October-03-12 2:45:04 PM

91238

Page 1

Item ID: D6101-003

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Saddle Billet, 7075

Start Date: 03/10/2012 Start Qty: 60.00

60

Cust Item ID:

Required Date: 05/12/2012 Req'd Qty: 60.00

60

Customer:

Reference:

Approvals:

Process Plan: MLSDate: 12-10-03 Tooling:

Date:

Run Start ***NR1***

QC:

Date: SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6101	Rev B								

100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 18082

- a) Description: Aluminum billet
- b) 7.875" x 6.250" x 2.00" thick
- c) Tolerance on all dimensions are +0.030"/-0.000"
- d) Grain direction along 7.875" length
- e) Material: 7075-T7351 (QQ-A-250/12)
- f) Material certification required

CZ 12/10/05 (60)

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

Rec'd 12/11/05 (60)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											

FAULT CATEGORY				
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

Work Order ID 91238

October-03-12 2:45:04 PM

91238

Page 2

Item ID: D6101-003

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Saddle Billet, 7075

Stop

NS2

Start Date: 03/10/2012 Start Qty: 60.00

60

Cust Item ID:

Required Date: 05/12/2012 Req'd Qty: 60.00

60

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00

120

CHK 12/12/15

60

14

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6101

130

Identify as per dwg & Stock Location: *Mat 42*

0.00

130

FK 12/11/15

60

Packaging

Memo

0.00

Packaging

140

QC21- Final Inspection - Work Order Release

0.00

140

12/11/19

QC

Memo

0.00

Quality Control

MF 12-11-16

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											

FAULT CATEGORY												
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

Picklist Print

October-03-12 2:45:08 PM

Page 1

Work Order ID: 91238

91238

Parent Item: D6101-003

D6101-003

Parent Item Name: Saddle Billet, 7075

Start Date: 03/10/2012

Required Date: 05/12/2012

Start Qty: 60.00

Required Qty: 60.00

Comments: IPP A: 01.05.04New IssueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-003P		Purchased	No			110	Each	0.0000	1	60			
D6101-003P									**				
7075-T7351 2X6.25X7.875													

12/14/12 (60)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

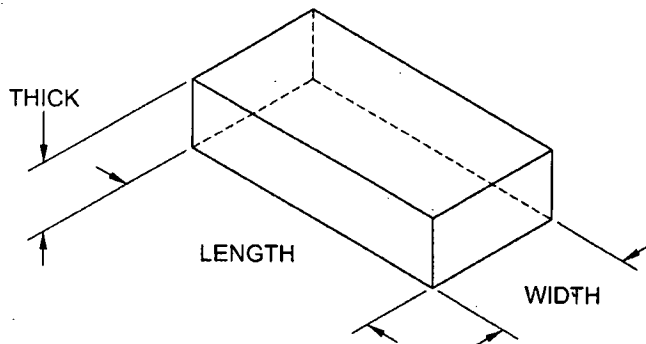
DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY									
Landing Gear			General						
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Pressure/Forced					
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware	<input type="checkbox"/> Over/Under tolerance	<input type="checkbox"/> Temperature/Cure					
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Part Incorrect	<input type="checkbox"/> Weld					
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Part Lost/Missing	<input type="checkbox"/> Wrong Stock Pulled					
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Part Moved						
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Positioned Wrong						
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread	<input type="checkbox"/> Power, Loss/Surge	<input type="checkbox"/> Other					
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset							
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration							
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence							
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions							

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

B

RELEASED
09/07/15/WP

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 91238 MCL5
 12-10-03

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:1539487

Expédié de / Ship From:		Vendu à / Sold To:		Expédié à / Ship To:		Livré à / Deliver To:	
A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date d'expédition / Date Shipped	F.O.B.	Modalités de transport / Freight Terms		Transporteur / Carrier		No du Bon de connaissance / BOL No	
13-NOV-2012	ORIGIN	Prepaid		MANITOULIN		1539487-2	

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch - MON
--	--

N° de commande / Order No	N° de ligne Line No	N° d'article / Item No	Description				
2474803	1	752237.MO	2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN () X 7.875 IN () SPECIFICATIONS: SHIP NOVEMBER 28TH ONLY - NOT BEFORE QQ-A-250/12				
N° de bon de commande / Purchase Order No		Nbre de pièces / Part Number		Qté commandée / Ordered Qty		Qté Facturée / Invoice Qty	
18082		YOUR ITEM NUMBER: D6101-003		60.00 PCS		60.00 PCS	
Détails / Details		SHIP NOVEMBER 28TH ONLY - NOT BEFORE QQ-A-250/12					
N° de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code méc / Mech Id	Pièce s / PCS	Largeur (Pouce)/ Width (IN)	Longueur (Pouce)/ Length (IN)	Qté expédiée/ Shipped Qty(LBS)
118146013	MATERIALS TECHNOLOG Y SOLUTIONS	447482		4			40.6434
118146013	MATERIALS TECHNOLOG	605568A5		48			487.7206

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.
Date Printed: 13-NOV-2012 11:00:03 AM

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 2 of 2

	Y SOLUTIONS						
118146013	MATERIALS TECHNOLOG Y SOLUTIONS	528955A8		5			50.8042
118146013	MATERIALS TECHNOLOG Y SOLUTIONS	528768A5		3			30.4825
<p>Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.</p> <p>These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.</p> <p>Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.</p> <p>We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.</p>							
Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative:				Date:		Name:	

Item 752237.Bo

PO 16963

3 pages

SHIP TO:
SCOPE METAL GROUP LTD
P.O. BOX 3 BNE AYISH
PARK REEM
MIVZA, IL 79845

BOLD TO:
SCOPE METAL GROUP LTD
P.O. BOX 3 BNE AYISH
PARK REEM
MIVZA, IL 79845

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4212407

CUSTOMER PO NUMBER: 4800013870		WORK PACKAGE:		CUSTOMER PART NUMBER:		SHIP UNLOAD: 101942/6		GOVT CONTRACT NUMBER:	
KAISER ORDER NO: 1105688	LINE ITEM: 9	SHIP DATE: 10-DEC-2010	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate			
WEIGHT SHIPPED: 15002 LB	QUANTITY: 11 PCS EST.	SL NUMBER: 2020988	GAUGE: 2.0000 IN		DIAMETER/WIDTH: 48.500 IN	LENGTH: 144.500 IN			

According to RoHS

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7066/RevA
DPS 4.713/RevAH
MMS 158/RevN

Certified Specifications

AMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 026/RevT
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 528768A5 Cast 344

Drop 87

Ingot 2

(ASTM E8/B557)
(EN 2002-1)

Tensile: Temper
T7351

Dir / # Tests
LT / 2 (Min:Max)

Ultimate KSI (MPA)
71.3 : 73.5
(492 : 507)

Yield KSI (MPA)
60.5 : 63.6
(419 : 438)

Elongation %
11.8 : 11.9

(ASTM E1004)
(EN 2004-1)
Conductivity %IACS : 41.3 Min
(MS/M) : 24.0 Min

41.8 Max
24.2 Max

(ASTM E1251)

Chemistry:
Actual

SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
0.10	0.18	1.4	0.03	2.4	0.20	5.7	0.03	0.01	0.01	TOT 0.05

C.NO 21199
OC.NO 537050812367805



Castle Metals Mon

HEAT NUMBER 528768A5
MECHANICAL ID _____
ITEM CODE 752237.Bo
LOT NUMBER 2768756 MON
PO NUMBER 16963
RECEIPT DATE 10-23-12
SUPPLIER MTS
SPECIFICATION AMS-QQ-A-250/12
LCS _____
COMMENT _____
APPROVED _____

SCOPE METAL GROUP LTD.
מפעל סקופ מתכות בע"מ
QUALITY INSPECTION/תורת איכות

Date 30.12.12
Order No. 75874
Invoice 540-2895
Material conforms / מתכת עומדת בתנאים
to Spec. AMS-QQ-A-250/12
Inspector MTS 540/12

OLGA MULLER 3
O.G. NUMBER

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 387-2588

CERTIFIED TEST REPORT

Serial Number
4212407

Lot: 528842A8 Cast 356 Drop 03 Ingot 5

(ASTM B8657)
(EN 2002-1)

Tensile:	Temper	Dk / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.0 : 72.5 (498 : 500)	60.8 : 62.2 (420 : 428)	10.8 : 11.0

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS :	41.2 Min	41.7 Max
(MS/M) :	23.9 Min	24.2 Max

(ASTM E1261)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.17	1.4	0.03	2.5	0.20	5.6	0.02	0.01	0.01	TOT 0.05

Lot: 528855A8 Cast 344 Drop 89 Ingot 1

(ASTM B8657)
(EN 2002-1)

Tensile:	Temper	Dk / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.5 : 72.7 (493 : 501)	61.1 : 62.6 (421 : 432)	11.5 : 12.2

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS :	41.4 Min	41.7 Max
(MS/M) :	24.0 Min	24.2 Max

(ASTM E1261)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.18	1.4	0.03	2.4	0.20	5.2	0.04	0.01	0.01	TOT 0.05

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.8	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS
SHIP TO STOCK



32-1052-06

KAISER ALUMINUM

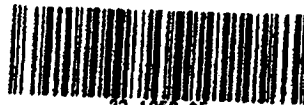
Thentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4212407

TEST NOTES

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.



32-1052-05

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC KAISER HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 228.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 228.226 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTITIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. 18C-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

A handwritten signature in black ink, appearing to read "Bill Poynor".

Page 3 of 3

Item 752237. Bo 10 16963 4 pages

Aleris Aluminum Koblenz GmbH
Carl-Spaeter-Str. 10 56070 Koblenz/Deutschland



Aleris
Europe

INSPECTION CERTIFICATE (EN 10204/3.1) / TEST REPORT / APPROVED CERTIFICATE

NO.: 0170878

SERIAL-NO.:

PAGE: 1 / 4

ORDER NO. PURCHASER: 030736 ITEM 02
PART NO. PURCHASER: P752T7351UT-161.25-6
ORDER NO. MANUFACTURER/ITEM: 64371 / 02
PRODUCT: PLATE
SPECIFICATION: AMS-ASTM-AMS-QQ-A-MMS159
ALLOY/TEMPER: 7075 T7351
DIMENSION: 2.000 x 64.50 x 161.25 INS

PCS.	GROSS LBS	NET LBS	PACK-NO	LOT-NO	PACK-DAT.
2	4.665	4.242	733397	447482	21.12.11
1	2.471	2.123	733398	447482	21.12.11

WT:10.05 07/08

DAS
14
OK
21/11/15

Castle Metals Men

HEAT NUMBER 447482
MECHANICAL ID _____
ITEM CODE 752237-Bo
LOT NUMBER 2768757MON
PO NUMBER 16963
RECEIPT DATE 10-23-12
SUPPLIER MTS
SPECIFICATION AMS-QQ-A-250/12
LCS _____
COMMENT _____
APPROVED Y



INSPECTION CERTIFICATE (EN 10204/3.1) / TEST REPORT / APPROVED CERTIFICATE

NO.: 0170878

LOT: 447482

PAGE: 2 / 4

RESULTS:

Mechanical properties:

El. No.	Spec. No.	Y.S.	U.T.S.	El.
		KSI	KSI	%
Min. LT:		57,0	59,0	6,8
MAX. LT:		58,0		
1 A		61,3	72,7	11,9
1 B		61,3	72,7	11,7

chemical composition: in % : remainder Al

CERT NO.: 4-11-3554

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	B
0,058	0,107	1,752	0,011	2,457	0,193	5,660	0,0336	0,0013
Zr	Pb	Ni	Sn	Be	Na	Lf	V	H2 (*)
0,0091	0,0029	0,0066	0,0025	0,0002	0,0000	0,0000	0,0090	0,07
Al	Tl	Tl+Zr	Cu/Mg	Fe/Si				
		0,043		2,1				

(*) = H2 in ml/100 g Al

Other tests:

Dimensional check:	OK	
Surface control:	OK	
Ultrasonic test:	OK	US-spec.: ASTM+BSS+GS+AM+PS+GA+Mil

Normative references:

LEGIERUNGSNORM/CHEMICAL COMPOSITION STANDARD/COMPOSITION CHIMIQUE

AMS 4078G+AMS-QQ-A-250/12 APR 2007+ASTM B 209 - 07+

MMS 159N

FESTIGKEITSNORM/MECH. PROP. STANDARD/CARACTERISTIQUE MECANIQUE

AMS 4078G+AMS-QQ-A-250/12 APR 2007+ASTM B 209 - 07+

MMS 159N

BESTELLNORM/SPECIFICATION/NORME

AMS 4078G+AMS-QQ-A-250/12 APR 2007+ASTM B 209 - 07+

MMS 159N

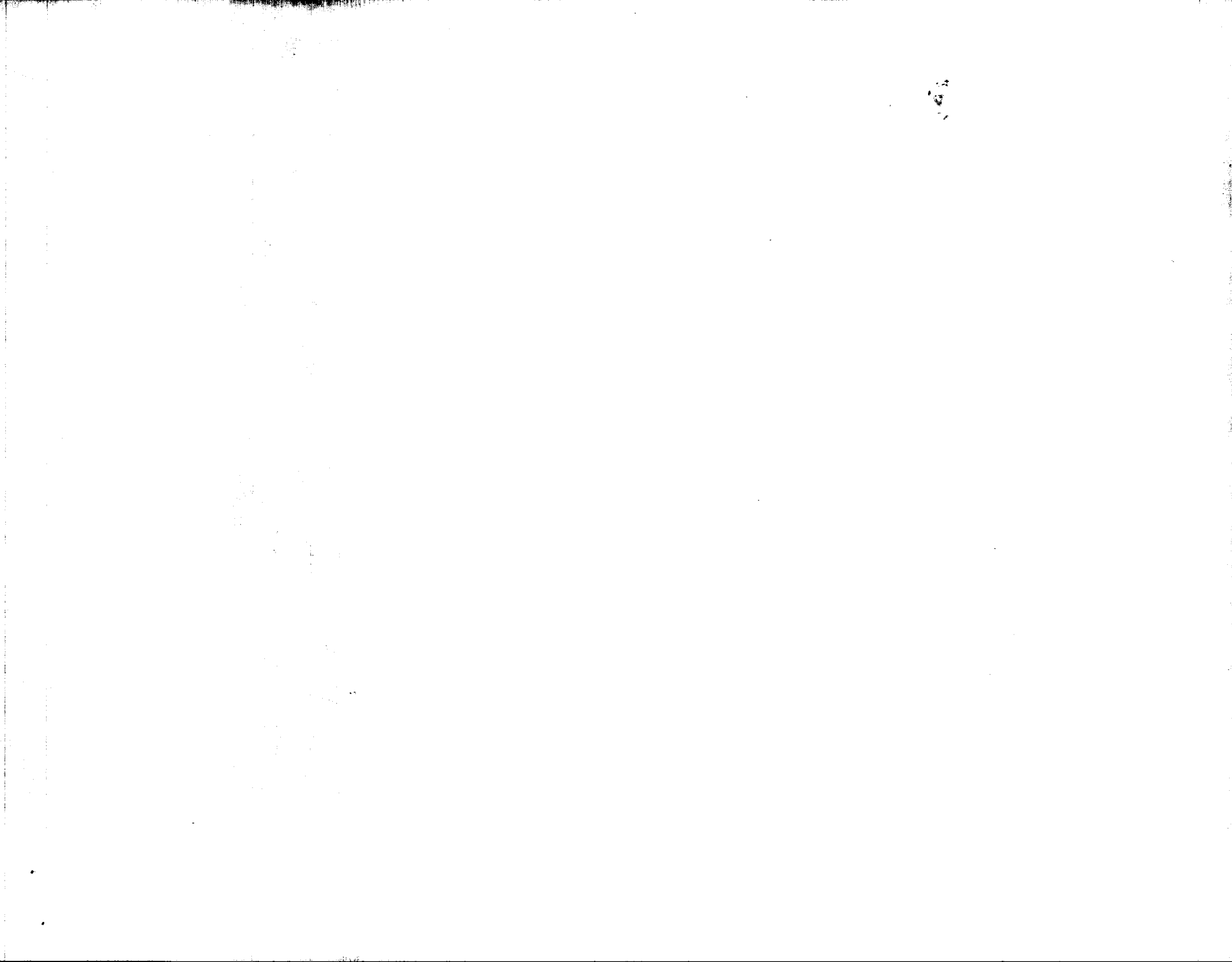
ULTRASCHALLNORM/ULTRASONIC STANDARD/ULTRASONS - NORME

ASTM B594+BSS 7055A+GSS 16100+AMS-STD-2154 TYPE 1+

PS 21211+GAMPS 9101+MIL-STD-2154 TYPE 1 CL.A

WT-TQ-05.0708

14
8-83
DAS
12/11/15





INSPECTION CERTIFICATE (EN 10204/3.1) / TEST REPORT / APPROVED CERTIFICATE

NO.: 0170878

PAGE: 4 / 4

Remarks:

CERTIFIED THAT THE WHOLE OF THE SUPPLIES DETAILING HEREON HAVE BEEN MANUFACTURED, INSPECTED, TESTED AND UNLESS OTHERWISE STATED CONFORM IN ALL RESPECTS TO THE RELEVANT SPECIFICATIONS, DRAWINGS AND CONTRACT/ORDER. WE CONFIRM THAT QUALITY MANAGEMENT SYSTEM OF ALERIS ALUMINUM KOBLENZ GMBH IS IN ACCORDANCE WITH DIN EN ISO 9001 AND EN 9100 IN THE RELEVANT VALID VERSION AND CERTIFIED BY AN ACCREDITED 3RD PARTY.

MADE IN THE FEDERAL REPUBLIC OF GERMANY

enclosures:

WTXQ050708

Koblenz, the 09.01.12 IK

P. Gardiner
Patrick Gardiner
Quality assurance

Aleris Aluminum
Koblenz GmbH

Item 752237.Bo Po 16963 2 pager

SHIP TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154	
SOLD TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154	

**KAISER
ALUMINUM**
Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT
Serial Number
4275282

CUSTOMER PO NUMBER: 035929		WORK PACKAGE:		CUSTOMER PART NUMBER:		SHIP RUN/LOAD: 102420/22		GOVT CONTRACT NUMBER:					
KAISER ORDER NO: 1135384		LINE ITEM: 8		SHIP DATE: 10-SEP-2012		ALLOY: 7075		CLAD: BARE		TEMPER: T7351		PRODUCT DESCRIPTION: Sawed Plate	
WEIGHT SHIPPED: 5324 LB		QUANTITY: 3 PCS EST.		TRUCK B/L #: 2038751		GAUGE: 2.0000 IN (50.8000 MM)		DIAMETER/WIDTH: 60.500 IN (1538.7 MM)		LENGTH: 144.500 IN (3670.3 MM)			

MHU 1618538: LOT 605568A5: 2 pieces;
MHU 1618539: LOT 605568A5: 1 pieces;

Certified Specifications

- | | | |
|---|---|---|
| AMS 4078/RevJ
ASTM B 209/Rev10
BSS 7055/RevA
DPS 4.713/RevAH
MMS 159/RevT | AMS-QQ-A-250/12
ASTM B 594/Rev09
CMMP 025/RevU
GAMPS 9101/RevB
PPS 20.04/Rev7 | AMS-STD-2154/Rev98
BAC 5439/RevH
CSTI 006/RevD
GSS18100/RevG/Amd1
PS 21211/RevL |
|---|---|---|

Test Code: 4297

Test Results

Lot: 605568A5 Cast 487 Drop 07 Ingot 3 Melted in USA

(ASTM E8/B567)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	T7351	LT / 2 (Min:Max)	69.3 : 70.2 (478 : 484)	57.0 : 59.0 (393 : 407)	11.5 : 11.9

(ASTM E1004) (EN 2004-1)	
Conductivity %IACS :	41.0 Min
IMS/M) :	23.8 Min
	41.2 Max 23.8 Max

(ASTM E1251)											
Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.17	1.4	0.02	2.4	0.20	5.6	0.03	0.01	0.01	TOT 0.05

9-89
14 OK 12/11/15

Castle Metals Mon

HEAT NUMBER 605568A5
MECHANICAL ID _____
ITEM CODE 752237.Bo
LOT NUMBER 2768758MON
PO NUMBER 16963
RECEIPT DATE 10-23-12
SUPPLIER MTS
SPECIFICATION AMS-QQ-A-250/12
LCS _____
COMMENT _____
APPROVED /

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4275282

ALLOY LIMITS

7075	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

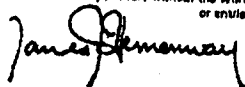
Aluminum Remainder

TEST NOTES

Metal represented by this test report was 100% immersion ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.672-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law. ISO-9001:2000 certified.



JAMES HEMMENWAY, LABORATORIES SUPERVISOR

I am 15231-130 10-1-10

SHIP TO:
SCOPE METAL GROUP LTD
P.O. BOX 3 BNE AYISH
PARK REEM
MIVZA, IL 79845

SOLD TO:
SCOPE METAL GROUP LTD
P.O. BOX 3 BNE AYISH
PARK REEM
MIVZA, IL 79845

**KAISER
ALUMINUM**
Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2588

CERTIFIED TEST REPORT

Serial Number
4212407

CUSTOMER PO NUMBER: 4800013870	WORK PACKAGE:	CUSTOMER PART NUMBER:	SHIP RUN/LOAD: 101942/8	GOVT CONTRACT NUMBER:
KAISER ORDER NO: 1105688	LINE ITEM: 9	SHIP DATE: 10-DEC-2010	ALLOY: 7075	CLAD: BARE
TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate			
WEIGHT SHIPPED: 15802 LB	QUANTITY: 11 PCS EST.	SL NUMBER: 2029988	GAUGE: 2.0000 IN	DIAMETER/WIDTH: 48.500 IN
			LENGTH: 144.500 IN	

According to RoHS

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7066/RevA
DPS 4.713/RevAH
MMS 159/RevN

Certified Specifications

AMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 025/RevT
GAMPS 9101/RevB
PS 21211/RevK

Scope	MATERIAL TESTED
Electrical conductivity, % IACS	41.4
Inspector	Loi 528942A6

Test Code: 4297

Test Results

Lot: 528788A5 Cast 344

Drop 87

Ingot 2

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	T7351	LT / 2 (Min:Max)	71.3 : 73.5 (492 : 507)	60.8 : 63.8 (419 : 438)	11.8 : 11.9

Scope	MATERIAL TESTED
Electrical conductivity, % IACS	41.4
Inspector	Loi 528768A5

(ASTM E1004) (EN 2004-1)		
Conductivity %IACS :	41.3 Min	41.8 Max
(MS/M) :	24.0 Min	24.2 Max

Scope	MATERIAL TESTED
Electrical conductivity, % IACS	41.3
Inspector	Loi 528955A8

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.18	1.4	0.03	2.4	0.20	5.7	0.03	0.01	0.01	TOT 0.06

C.NO 21199
OC.NO 537050812367805



SCOPE METAL GROUP LTD.
מבדק סקופ מתכות בע"מ
QUALITY INSPECTION/איכות/קורא

Date: 50.12.10
Order No. 15875
Invoice: 1540-20013
Material conforms (מקור מתכות) (מקור מתכות)
to Spec. HKS-20013
Inspector: HKS 1540

01-01-10
O.E. MALIK

Castle Metals Mon

HEAT NUMBER 528755A8

MECHANICAL ID

ITEM CODE 752237-130

LOT NUMBER 2768759MON

PO NUMBER 16963

RECEIPT DATE 10-23-12

SUPPLIER MTS

SPECIFICATION AMS-QQ-A-250/12

LCS

COMMENT

APPROVED

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4212407

TEST NOTES

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.



32-1052-05

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.472-1(b), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 225.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR OMISSIONS ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. 18U-9001.2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

A handwritten signature in black ink, appearing to read "Bill Poynor", with a stylized flourish at the end.